

ENCAPSULATED GRAPHITE HEATER AND PROCESS

ABSTRACT

A graphite heater and method of forming a graphite heater comprising a graphite body configured to form an electrical heating circuit for at least one heating zone through the graphite encapsulated in a continuous overcoat layer comprising at least one of a nitride, carbide, carbonitride or oxynitride of elements selected from a group consisting of B, Al, Si, Ga, refractory hard metals, transition metals, and rare earth metals, or complexes and / or combinations thereof, wherein prior to being configured to form the electrical heating circuit path, the graphite body is coated with a layer comprising at least one of a nitride, carbide, carbonitride or oxynitride of elements selected from a group consisting of B, Al, Si, Ga, refractory hard metals, transition metals, and rare earth metals, or complexes and / or combinations thereof.